

CLAIMS

What is claimed is:

1. A method of checking clearance between a stamping die and a workpiece transfer system end tool, said method comprising the steps of:
 - a) placing the end tool into a position relative to the stamping die;
 - b) positioning a template representative of relative movement between the stamping die and the end tool on the end tool; and
 - c) indicating contact between the end tool and the stamping die during operation of the stamping die and workpiece transfer system in response to any part of said template contacting the stamping die.
2. The method as recited in claim 1, including supporting a portion of the stamping die on a reference plane, and supporting said end tool on a stand in a predetermined position relative to said die.
3. The method as recited in claim 2, wherein the predetermined position duplicates a position of the end tool relative to the stamping die with said end tool assembled within the workpiece transfer system.
4. The method as recited in claim 1, wherein said template represents movement between the end tool and the stamping die in two dimensions.
5. The method as recited in claim 1, wherein said template represents movement between the end tool and the stamping die in three dimensions.
6. The method as recited in claim 1, wherein said template represents relative movement between said stamping die and said end tool along a return path toward a grasping position where the end tool grasps the workpiece.

7. The method as recited in claim 1, wherein said template represents relative movement between the stamping die and said end tool along a transfer path toward a release position where the end tool releases the workpiece.

8. A method of checking clearance between a stamping die and a workpiece transfer system end tool, said method comprising the steps of:
 - a.) positioning a template comprising a surface representative of relative movement between the stamping die and the end tool relative to a portion of a stamping die; and
 - b.) indicating that the end tool will contact the stamping die in response to a portion of surface of the template contacting said stamping.
9. The method as recited in claim 8, wherein the surface represents movement between the end tool and the stamping die in two dimensions.
10. The method as recited in claim 9, wherein the surface represents movement between the end tool and the stamping die in three dimensions.
11. The method as recited in claim 8, wherein the surface of the template represents relative movement of the end tool moving toward a grasp position where the end tool grasps the workpiece.
12. The method as recited in claim 8, wherein the surface of the template represents relative movement of the end tool moving away from a release position where the end tool releases the workpiece
13. The method as recited in claim 8, wherein the surface of the template represents relative movement within a vertical plane between the end tool and the stamping die.
14. The method as recited in claim 8, wherein the surface of the template represents relative movement within a horizontal plane between the end tool and the stamping die.
15. The method as recited in claim 8, wherein said template represents relative movement of the end tool between two stamping dies.

16. A die check assembly comprising;
a template having a surface representing relative motion between a workpiece transfer system end tool and a stamping die during operation of the stamping die and the workpiece transfer system.
17. The assembly as recited in claim 16, wherein said surface represents motion of the end tool relative to the stamping die during movement of the end tool toward a grasp position where the end tool grasps a workpiece.
18. The assembly as recited in claim 16, wherein said surface represents motion of the end tool relative to the stamping die during movement of the end tool away from a release position.
19. The assembly as recited in claim 16, wherein said surface represents motion of the end tool relative to the stamping die in two dimensions.
20. The assembly as recited in claim 16, wherein said surface represents motion of the end tool relative to the stamping die in three dimensions.
21. The assembly as recited in claim 16, wherein said surface represents motion of the end tool relative to the stamping die within a vertical plane.
22. The assembly as recited in claim 16, wherein said surface represents motion of the end tool relative to the stamping die within a horizontal plane.